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Successor to the Geological Newsletter

UNITED STATES GEOLOGICAL SURVEY





October 1956

Volume 1, No. 4
Published Monthly by the American Geological Institute

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# alendar

Cooperation of Society Secretaries in supplying meeting notices for GEOTIMES calender is re-quested.

Oct. 1-4, 1956—AMER. MINING CONGRESS, Metal Mining & Ind. Mineral Conv. & Exposi-tion. Shrine Exposition Hall, Los Angeles, Calif. Hotel Reservations from A.M.C. Hous-ing Bur, L. A. Chamb. of Comm., 1151 S. Broadway, Los Angeles 15, Calif.

Oct. 2-5, 1956—NATIONAL WATER WELL AS-SOCIATION, Ann. meeting and Exposition. New Franklin Co. Veteran's Memorial Audi-torium, Columbus, Ohio.

ct. 8-10, 1956—NATIONAL CLAY MINERALS CONFERENCE, Univ. of Illinois, Urbana. Ill.

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et. 9-12. 1956—WILLISTON BASIN GEOLOGICAL SYMPOSIUM. 27 papers on past,
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1123. Bismarck, N. D.

Oct. 14-17, 1956—A.I.M.E., Petroleum Br. Bilt-more Hotel, Los Angeles, Calif.

Coal Div., Sheraton-Park Hotel, Washington, D. C.

ct. 29-Nov. 1, 1956—SEGp, 26th Ann. mtg., Roosevelt Hotel, New Orleans. Oct. 29-Nov.

Oct. 31-Nov. 2, 1956—GULF COAST ASSOCIA-TION OF GEOLOGICAL SOCIETIES, 6th Annual Convention, Plaza Hotel, San Antonio,

Oct. 31, Nov. 1-2 1956—GSA, MSA, PS, SVP, AGI Ann. Mtg., Minneapolis.

Nov. 8-9, 1956—A.A.P.G., S.E.Gp., & S.E.P.M., Pacific Section, Ambassador Hotel, Los Angeles, Calif.

Nov. 8-10, 1956—A.I.M.E., N.E. REGIONAL MEETING, Mining Branch, Hotel Hershey, Hershey, Pa. 1957-58—INTERNATIONAL GEOPHYSICAL

YR. an. 17-18, 1957—ENGINEERS JOINT COUN-CIL, Statler Hotel, New York City.

Feb. 24-28, 1957—A.I.M.E., Annual Meeting, Ho-tels Roosevelt and Jung, New Orleans, La.
Mar 10-16, 1957—ENGINEERS JOINT COUN-CIL, 2nd Nuclear Engineering and Science Congress, Convention Hall, Philadelphia.

April 1-4, 1957—A.A.P.G., National Convention, Kiel Auditorium, St. Louis, Mo. April 5, 6, 1957—PACIFIC SOUTHWEST MINERAL INDUSTRY CONF., sponsored by Nevada, San Francisco & So. Cal. Sees. of A.I.M.E., Reno, Nev.

May 6-8, 1957—AMERICAN GEOPHYSICAL UNION, 38th Annual Meeting, Washington,

ay 16-18, 1957—G.S.A., SOUTHEASTERN SECTION, Morgantown, W. Va.

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## This Month in GEOTIMES



Successor to the Geological Newsletter

#### Published by THE AMERICAN GEOLOGICAL INSTITUTE

Robert C. Stephenson, EDITOR

Kathryn Lohman CIRCULATION MANAGER

Vol. 1, No. 4

October 1956

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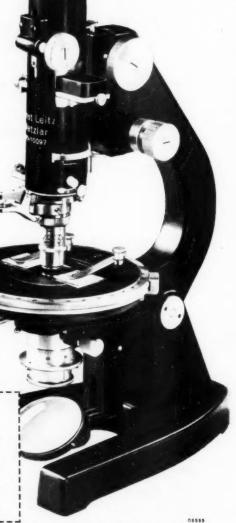
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#### Our Institute

The XXth International Geological Congress in Mexico provided a heartening stimulus for the American Geological Institute. First of all, the Director had an opportunity to meet and talk with many constituents. It was gratifying to learn that U. S. geologists, particularly those serving in foreign fields, appreciate the AGI and its program. Many foreign geologists who visited the AGI booth, expressed keen interest in the AGI, its organization and purpose.

In the meetings of the Council of the Congress, some of the major discussions centered on international problems in which AGI is already active or was mentioned as a logical agency. An international abstracting service was proposed that would embrace data from Geological Abstracts. In proposing an exchange of geologic literature between the West and the Iron Curtain countries, AGI was suggested as a participating agency. Our Mexican friends have proposed a glossary of geologic terms for the Spanish-speaking nations and offered the opinion that a union or institute of Latin American geologists might best accomplish this and other tasks requiring united effort. These are a few of the areas in which a federation of geologists of a nation may join to participate in solution of problems of international scope.

At the AGI booth more than two thousand copies of GeoTimes were distributed to those in attendance at the Congress. Our regular readers expressed great enthusiasm for the change from the Geological Newsletter to GeoTimes. Introduced to our magazine for the first time, foreign geologists were most interested to learn of it. Judging from the number of Soviet geologists who visited our booth, GeoTimes will be studied intently behind the Iron Curtain.

Yes, the Congress in Mexico City was a rewarding experience. If we are to accept the challenges of international responsibilities suggested during and by the Congress, the American Geological Institute must have the support and efforts of more than a dedicated few—it must and should be accorded the support of all of our geoscientists.



#### OUR COVER

This line drawing of a Jurassic landscape is featured on the cover of the recently issued Paleontectonic Maps of the Jurassic System, first of a new U. S. G. S. Folio Series. See Books. Photo by courtesy of the U. S. G. S.

The AMERICAN GEOLOGICAL INSTITUTE is a non-profit professional service organization established and managed by the scientific societies in the fields of geology and geophysics in cooperation with the National Academy of Scienceshational Research Council. It is the instrument of the profession serving and advancing the welfare of the geocientist in matters relating to education, professional responsibilities and government relations. It is an active member of the Scientific Manpower Commission. It also functions in the stimulation of public advaction and awareness of the earth sciences, through career literature, the scouting program and other channels of communication.

GEOTIMES is the news magazine of the geological sciences. It reports on current events in the earth sciences, public education and public relations efforts throughout the profession, as well as appropriate legislative and governmental issues. It announces scholarships, fellowships, publications and new developments. It provides a forum for discussion of timely professional problems, and affords a common bond between the many specialized groups within the earth sciences.

# REPORT on the XXth INTERNATIONAL GEOLOGICAL CONGRESS

In a world that is today on edge due to international tension over the Suez crisis, it is a pleasure to report on the XXth International Geological Congress which met in Mexico during the past weeks. Nearly 3500 congresistas, representing the geologists of some 70 countries, gathered in Mexico for the Congress, its technical sessions and field excursions. By the end of the pre-Congress field trips, geologists from many parts of the world had made friends with people from distant places. Even the delegates from the Iron Curtain countries showed interest in friendly exchanges, so typical of the geological fraternity. A strange combination of languages, accentuated and punctuated with copious signs, often provided the medium for communication in unfamiliar tongues.

Regardless of country and language, there were warm words of praise by all of the attending geologists for the Mexican Organizing Committee and its staff, who did a magnificent job of planning and execution of Congress functions in the face of many difficulties. On the distaff side, there was great enthusiasm among the ladies over the interesting activities provided for them by their gracious hostesses under the direction of the Comite de Damas. Our Mexican hosts and hostesses were extraordinarily successful in punctuating the technical scientific sessions with functions which portrayed the warmth typical of Mexico and its people.

The Congress was officially opened on Tuesday, September 4 at an impressive ceremony in the National Auditorium when the President of the Republic of Mexico, Adolfo Ruiz Cortines, extended a brief message of welcome to the visiting geologists. Professor Charles Jacob of France, President of the XIXth I. G. C., Algiers 1952, introduced the newly elected president of the XXth Congress, Ing. Antonio Garcia Rojas, who extended a cordial welcome to fellow geologists. The Secretary of National Economy and Honorary President of the Organizing Committee, Gilberto Lovo, spoke briefly on the importance of mineral resources to the economy of Mexico and of the challenge before the geological profession in providing adequate mineral resources to meet the needs of the rapidly advancing world civilization. Following the inaugural cere-monies, the congress was entertained at a gala buffet luncheon on the terraces of Chapultepec Castle, overlooking Mexico City.

To report on the technical sessions is a completely frustrating task. The program listed over 900 papers, but between 40-50% of these were read only by title. Unfortunately, many authors were rather uncooperative in that they failed to advise the Organizing Committee that they would not be available for presentation of their papers. As a consequence, the session schedules were disrupted. Your reporter was able to attend only a few technical sessions, for his time was divided between the AGI exhibit and the meetings of the Council of Delegates. As a roving reporter, however, he found that very few geologists had attended sufficient sessions in any of the 24 general groups of papers to give a synopsis of the papers of any groups. Not only did the technical sessions have competition from the Council meetings, but from concurrent field trips in vicinity of Mexico City, sight seeing to the pyramids of Teotihuacan and elsewhere, shopping with the good wife, and talking with acquaintances old and new.

The symposium on manganese, coordinated by Dr. J. Gonzalez Reyna, was one of the best attended and most widely acclaimed portions of the program. The program listed 52 papers on manganese. The oil and gas symposium, coordinated by Ed Guzman, was also well attended, as was the symposium on geochemical prospecting arranged by Tom Lovering. The Russians pulled a surprise when they submitted at the last minute some 20 papers for the Cambrian symposium. Inasmuch as the symposium papers on the cambrian had already been published, a supplement will undoubtedly have to be prepared.

Many of the Russian papers were read only by title, but the delegation of approximately 60 Russian geologists took an active part in discussion of papers—even though their approach seemed often obtuse.

#### **Council of Delegates**

Simultaneous translation into the six official languages of the Congress, in a manner similar to that employed by the United Nations, made the council meetings interesting and stimulating. Ing. Eduardo Guzman, Secretary of the Congress, distinguished himself particularly as moderator of a large portion of the council sessions. Time after time he summarized the protracted statements of delegates in a few concise sentences thus preventing confusion and divergence from the objectives.

At the opening session, Dr. J. L. Gillson, speaking for the U. S. delegation, lauded the Mexican geologists for their excellent planning, preparations and execution of Congress functions in the face of difficult obstacles. Head of the Soviet delegation, D. I. Scherbakov, voiced their regret that the Chinese Peoples' Republic was not represented at the Congress. He went on to extoll the achievements of the Russian geologists—now 25,000 strong he stated—in advances in geologic knowledge and the development of mineral resources as the basis for the vigorous industrial growth in Russia.

It was proposed in the Council by F. Blondel of France and approved that a Section of Applied Geology be made a regular part of the program of each I. G. C. A proposal by Soviet geologist Bogdanoff for a tectonic map of the world was approved and referred to a sub-commission of the Commission for the Geologic Map of the World to be appointed. Also approved as a sub-commission to the geologic map commission was the Soviet-proposed sub-commission on Current Geobioclimatological Problems, and another on a World Metalogenetic Map.

Congress headquarters, School of Odontology, University City.



Congress officials—Left to right: Secretary Eduardo Guzman; President Antonio Garcia Rojas; XIX Congress President Charles Jacob (France); and Secretary Jenaro Gonzalez Reyna.



Congress of Delegates listening to simultaneous translations of a Russian speech into the five other official languages.

Below left: AGI brass meets at AGI booth—left to right: A. E. Eckhardt, Past-President; M. M. Leighton, President; and J. L. Gillson, Vice President. Right: AGI booth from which 2000 copies of GeoTimes were distributed.





#### International Abstracts

After proposing an international abstracting service, Dr. H. M. B. Schurmann, Netherlands, was appointed head of a Commission on International Abstracts. The work of the Commission is expected to coordinate existing services in France, U. S. S. R. and the United States, and move on to world wide coverage. An International Committee on Geological Terminology in Spanish was introduced by G. P. Salas, Mexico, and approved.

The Leonide Spendiarov Prize, awarded to a young geologist in the country in which the Congress is held, was given to Mexican Manuel Alvarez, of the National Institute of Scientific Research and the National School of Engineering, for his work on the Tectonics of the Mexican Republic. Alvarez received his geologic training at the University of Californa.

Dr. T. Sorgenfrei, on behalf of the Danish Delegation, extended an invitation to the council to hold the XXIst I.G.C. meeting in Copenhagen in 1960. Cooperating closely with the Danes will be the other Scandinavian countries-Finland, Sweden, Norway and Iceland. Field excursions to these countries are anticipated in the plans. The invitation was accepted, with the alternative proposal that the meeting be held in West Germany, should the Scandinavian plans hit a snag. Venezuela also extended an invitation for the 1960 I. G. C. The Indian Delegation, most interested in playing hosts in 1960 to the XXIst Congress are reported to have received cable confirmation of governmental support only minutes after the Danish invitation was accepted. An effort to reopen consideration of the matter was blocked. New Zealand made an early bid that the XXIInd I. G. C. be held in their country in 1964, when the Geological Survey of New Zealand will be celebrating its centennial.

#### Exchange Proposed

After several committee meetings on the exchange of scientific geologic data between the Iron Curtain countries and the Western World, Dr. Rhodes W. Fairbridge of Columbia University was named to coordinate this exchange.

Head of the official U.S. Delegation, Under Secretary of the Interior, Felix Wormser, commented on the unifying results of such scientific meetings as the International Geological Congress. The U.S. delegation elected to follow a passive role in the council sessions, lending constructive support to the numerous worthwhile proposals which were made. The U.S. dele-

gation was hampered by the fact that the final official appointments made by the State Department were not announced until a few days before the meeting, so that the delegation had no opportunity to meet or communicate before the opening of the Congress.

General reports on the field excursions were favorable from all quarters. In many cases, last minute registrants nearly swamped the limited facilties available on some trips, but the tour agencies working with the Congress officials proved equal to most if not all such emergencies. In Baja California, where it has not rained in years, the field excursion was delayed three days by torrential rains. The Russian geologists (by Soviet choice) were restricted to certain excursions and did not mingle much with other field trippers. They took



Excursion A 6 (2) leaves Oaxaca for the Pluma Hidalgo rutile mine—Left to right:
L. J. Fernando, Ceylon; J. L. Gillson, U. S., H. Sommerlate, London, and Pedro Sanchez Mejorada, Mexico.

great delight in handing out medals along the way. Certainly the field trips, as always, provided a wonderful ice-breaking opportunity to become acquainted on a first-name basis with geologists of many countries.

Exhibits from many countries were displayed during the Congress. The American Geological Institute numbered among the exhibitors and from the Institute booth we distributed over 2000 copies of the Special I. G. C. issue of GEOTIMES. Our booth was a favorite of the ladies, for we also handed out 800 copies of "Shopping in Mexico," the handy, helpful shopping guide by Mrs. Grace Gillson. The U.S. G. S. exhibited their brand new and very impressive Jurassic Paleotectonic Folio. However, the big attraction of exhibitions was the Russian display of geologic maps and reports which occupied one whole wall of the hall. A 1:5,000,000 geologic map of the U. S. S. R., 1955, dominated the display. On close inspection it developed

that many of the reports displayed were Russian translations of reports from other countries.

#### D. F. Hewett Honored

The Society of Economic Geologists, which has quite a large foreign membership, held a dinner meeting at the University Club on Friday night that was attended by nearly 300 geologists and many wives. Dr. J. Gonzalez Reyna, a Regional Vice President of SEG, was accorded a warm salutation by President Frank Cameron for his part in the success of the Congress. The highlight of the occasion was the award of the Penrose Medal to Dr. D. F. Hewett, long time member of the U. S. Geological Survey, for his eminence in economic geology. Hewett in his acceptance speech modestly attributed his success to his father, a mining engineer, and to the good fortune of being at the right place at the right time.

The Mexican folk festival and the Charreado (Rodeo Mexican-style) staged for the Congress guests were most appreciated for they provided much local color. There were gala receptions for the delegates by the Mexican and Russian delegations. The Mexico Section of AIME provided a very gay dinner party at the University Club, featuring excellent native entertainment. Before dinner speakers on this occasion were Geologist Frank Morgan, pinch-hitting for AIME President Carl Reistle, and

Tom Lovering.

The ladies were wonderfully entertained by the charming hostess Sra. Alicia G. de Garcia Rojas and her ladies' committee. The ladies' events featured tours to colonial and ultra modern homes in Mexico City and was highlighted by a reception staged at the exclusive Jockey Club.

To periscope the events of more than three weeks into a few brief sentences is difficult but certain things stand out. Mexico is a land of opportunity which is obviously on the move. University City is a striking monument to this vitality. Our Mexican hosts can be proud of their achievements in staging the Congress. We all left Mexico with the hope of returning to enjoy more of its many beauties.

Charlie Denker, geologist with Geophysical Services, Inc., Shreveport, La., was most helpful to AGI in Mexico City He is the son of Mr. William Denker, an official in du Pont's Mexican company. Back home in Mexico City for the Congress, Charlie managed to pull strings and provide the necessary palaver in Spanish needed to get the delayed GeoTimes shipment through Customs.

#### Shopping in Mexico Did your wife

enjoy it?

AGI at its booth in Mexico distributed about 800 copies of the pamphlet "SHOPPING IN MEXICO" by Mrs. Grace Gillson, who knows a lot about shopping in Mexico. This was probably the most sought after literature of the Congress, and we met some very nice ladies who came by for their copies. Reports are that the ladies found it most helpful.

We had actually expected to charge \$0.25 for "SHOPPING IN MEXICO" to defray costs of preparation and shipment to Mexico. When we found we would have duty-problems if it were sold, we elected to distribute it free. We would not be averse to receiving a contribution of 3 pesos or more (or even U. S. currency) for our Reserve Fund from those who found this little booklet helpful.

Information on the availability of the new Geologic Map of Mexico and other publications of the XXth International Geological Congress, including the World Directory of Geologists, the Symposium on Oil and Gas, the Symposium on Manganese and the Symposium on the Cambrian System may be obtained by writing the Executive Committee, XXth International Geological Congress, Balderas 36—302A, Mexico, D. F.

#### Foreign Field Research

Graduate students in the earth sciences contemplating dissertations in subjects with geographical significance involving field studies abroad may obtain financial support under the program being conducted by the National Academy of Sciences-National Research Council. The Division of Earth Sciences, which is administering the program, and the Office of Naval Research, which is supplying the funds, interpret geography in its basic sense to include such earth science topics as shore processes, coastal development, stratigraphy and sedimentation of unconsolidated formations, landforms and drainage, mineral economics, and many aspects of pedology, glaciology, palynology, and climatology. The final date for the acceptance of proposals is December 1, 1956, and the results of the competition will be announced no later than January 31, 1957. Information and applications can be obtained by addressing Foreign Field Research Program, Division of Earth Sciences, 2101 Constitution Avenue, Washington 25, D. C.



By HOWARD A. MEYERHOFF Scientific Manpower Commission

Memories are short, and experience this past summer indicates the wisdom of reviewing some of the facts about Selective Service regulations and practice as they relate to student (II-S) deferments.

Executive Order 10,562 requires that college students seeking deferment for graduate study must stand in the top quarter of the senior class in college, or attain a score of 80 on the Selective Service College Qualification Test. College registrars, accustomed as they are to making out transcripts, might profitably add an appropriate space to the forms they use, to record the standing of each graduate. The absence of this information commonly leads to delay, unnecessary trouble, and sometimes a I-A classification for a student fully entitled to proceed with graduate study. Although there are several possible ways of recording the information, the best is the simple form: "Eleventh in a class of 100 male graduates."

Departmental advisors, graduate students, deans, and others concerned with graduate studies should remember that Selective Service requires evidence of formal registration in graduate school. In three cases that have come to SMC attention this summer, the students in question were engaged in thesis research but not in formal courses. The registrars' office had no record of registration that could be certified to Selective Service, and these men were classified I-A for failure to observe a necessary formality.

Undergraduates may profitably give more thought to the wisdom of taking the SSCQT whether or not they expect to continue with graduate study. Men planning to enter the medical profession are required to pass it with a grade of 70 to qualify for deferment, whereas scientists and engineers must pass it with a grade of 80 or better if they wish to seek II-S deferment to remain in university after graduation. Although the men who stand in the top quarter of the graduating class are the ones most likely to make 80 on the SSCQT, many a student who has failed to qualify on class standing has made the grade on the examination. Yet the percentage of the draft-eligible college population taking the examination dropped from 32 percent in academic year

#### Socony-Mobil Oil Co.

Becomes an Industrial Associate of the AGI

The American Geological Institute is pleased to announce that the Socony-Mobil Oil Co. has pledged support of the American Geological Institute as an Industrial Associate. With the addition of Socony the Institute's Industrial Associates now number 12. The companies are:

Amerada Petroleum Corporation Arabian American Oil Company Arkansas Fuel Oil Corporation Creole Petroleum Corporation Gulf Oil Corporation Phillips Petroleum Company Socony-Mobil Oil Co. Sohio Petroleum Company Standard Oil Company of California Standard Oil Company of New Jersey Texas Gulf Producing Company

One of the associates has asked to remain anonymous.

The financial support has been very important to the Institute during its formative years, while the Member Societies of AGI have been working toward a formula which will provide for the support of AGI's basic operations by the members of the profession. When this objective is achieved, however, it is the desire of the Institute administrators to utilize the funds provided through the Industrial Associate program to further the AGI career efforts, educational programs and to increase public awareness of geology and mineral resources. In addition to furthering the public appreciation of the geological sciences, the American Geological Institute recognizes a keen responsibility in working toward a better public understanding of non-renewable resources - petroleum and minerals.

Companies interested in the Industrial Associate Program of the American Geological Institute may write Dr. E. A. Eckhardt, Chairman of the AGI Finance Committee, Gulf Research & Development Co., P. O. Drawer 2038, Pittsburgh 30, Pa., or to Robert C. Stephenson, Executive Director, 2101 Constitution Ave., Washington, D. C. Contributions to AGI are tax exempt.

1950-51, when the test was first given, to 1.2 percent in academic year 1955-56.

And, it might be added, the six months critical skills reserve program is normally not available to graduate students. Their recourse is II-S deferment.

#### DIAMOND FRAUD EXPOSED

An episode in the life of Clarence King

by Paul Averitt

The Great Diamond Fraud of 1872 was one of the most flamboyant mining swindles in the history of American finance. Viewed in retrospect and stripped of glamour, it is revealed as a familiar "salted claim" promotion, but set up on such an opulent scale as to eliminate all suspicion. Caught up in the swindle were some of the most astute mining engineers, gemmologists, and financiers of the period, and it was only through the diligence and perseverance of Clarence King, then Director of the Geological Exploration of the Fortieth Parallel, that the true nature of the fraud was revealed. King's forthright and honorable denouncement of the fraud did much to enhance his already considerable reputation, and probably was a factor in his selection as first Director of the U. S. Geological Survey, which was established three years later in 1875.

When the announcement of an important find of diamonds in the Great American desert seeped out of San Francisco early in 1872, it caught the fancy of the American public as nothing else could, for the West was every man's personal Eldorado, and what could be more reasonable or desirable than a major diamond find? The gradual development and ultimate denouement of the fraud thus held the attention of the fascinated public for nearly a year. And it is still good copy today, 84 years later.

The most recent account of the Great Diamond Fraud appeared in an article of that title in the February, 1956, issue of American Heritage. The article is a chapter from a longer biography of Clarence King, by Harry H. Crosby, and is thus presented from King's point of view. Of equal interest is an account of the fraud told by one of the mulcted financiers in a book titled, "The Great Diamond Hoax and Other Stirring Incidents in the Life of Asbury Harpending," published in 1913.

#### A \$35,000 Landscape

The swindle was launched by two slick promotors, Philip Arnold and John Slack. With a stake of about \$50,000 acquired in several small, legitimate mining ventures, Mr. Arnold made two trips to Holland and England in 1870 and 1872, and there purchased about \$35,000 worth of rough, uncut, low-grade diamonds, bort, rubies, sapphires, and emeralds. were smuggled back to the United States and used to "salt" an area of about 160 acres on a desolate mesa in northeastern Utah. The promotors then appeared in San Francisco in old and weather-beaten prospectors' clothes, and with conspicuous furtiveness deposited a sack of uncut gems in the Bank of California. As they had planned, news of the provocative deposit soon reached officials of the bank, and gradually spread out among the mining fraternity. For a discreet period Arnold

and Slack remained cool and unapproachable, thereby firmly establishing their genuineness. At the proper time, however, they yielded to coaxing of Wiliam C. Ralston, an official of the Bank of California, and several of his associates, and for cash and a modest stock interest they agreed to the formation of a company to develop the new-found diamond field.

#### **Expert Opinion**

Mr. Ralston and his associates were the leading investment bankers and mining engineers in California, and were fully aware of the risks inherent in the mining business. They proceeded methodically to take every possible precaution against fraud-and disappointment. First, they sent two trusted emissaries to inspect the property. By agreement, these investigators were escorted by Arnold and Slack, and were blindfolded both going and coming

through the critical part of the journey. The investigators returned full of enthusiasm and with more stones to add to the collection in San Francisco. Next, Ralston and associates submitted an assortment of stones to Tiffany's in New York. Mr. Tiffany himself pronounced the stones genuine, and set a value of \$150,000 on the lot submitted, which by extrapolation meant that the total number of gems on hand was worth about \$1,500,000. Tiffany's valuation was in error, of course, and the only explanation is that neither Tiffany, nor anyone else in the United States at that time had had any experience with uncut diamonds.

As a final check, Ralston and associates employed Henry Janin, then the leading consulting mining engineer in the United States to inspect the property. Janin was an important and busy man, with a reputation comparable to that of John Hays Hammond of a later day, and for his services he exacted a record-breaking fee of \$2,500 and expenses, plus rights to 1,000 shares of stock in the new company-to-be. On his trip to the property Janin was accompanied by three of the financiers, including Harpending, who has included an eye witness account of the trip in his book.

After an examination of two days Janin pronounced the diamond field to be genuine, and to be worth many million dollars. With this final certification of the property from a recognized authority the financiers relaxed their vigilance.

#### Dreams of Opulence

Back in San Francisco, the Ralston interests organized the San Francisco and New York Mining and Commercial Company to develop the new-found diamond field, and to establish a diamond industry in San Francisco. The new company was capitalized at \$10,000,000 with 100,000 shares. So intense was interest in the company, and so firm was the belief in its ultimate destiny that the stock could have been sold to the public at almost any price. But a new diamond field was simply too good a thing to share with the general public, and in the hectic atmosphere a public offering would have completely disrupted the stock exchange. Financing was accomplished, therefore, by invitation to twenty-five of the outstanding business and financial leaders of San Francisco, who were permitted to purchase 2,000 shares each for individual payments of \$80,000. This distributed half of the stock and yielded \$2,000,000 for the company treasury. The other half of the stock was held by Ralston, Harpending, and several others as recompense for their previous outlays

of cash, and for their perspicacity.

Arnold and Slack had received about \$360,000 in cash in the preliminary and early phases of negotiation, and becoming naturally restive as the company plans matured, they sold all of their stock interest to the principals for an additional \$300,000. Thus they obtained about \$660,000 in all. Curiously, most of this sum ended up in Arnold's hands, and Slack disappeared from public view.

#### Enter Clarence King

News of all these exciting happenings reached Clarence King in the fall of 1872 when he was returning to San Francisco after a field season in Nevada. At that time he was only 30 years old, and already well established as one of the leading fig-

ures in American geology.

King was naturally much interested in the new discovery, but vaguely concerned about the incongruous association of diamonds, rubies, sapphires, and emeralds. He was also understandably curious as to the location of the deposit, which was a closely kept secret, and ascribed by rumor and insinuation to places as far away as Arizona and New Mexico. Piecing together hints and facts dropped by Janin and others with whom he talked, it soon became apparent to King that the locality must be only a short distance south of the Union Pacific Railway, and well within the area covered by the survey of the Fortieth Parallel. Inasmuch as the survey had not revealed suitable diamondbearing ground, it became important for King to inspect the property personally. As King himself stated in his famous report denouncing the fraud, which was published in the December 10, 1872, issue of the Engineering and Mining Journal: ". . . Feeling that so marvelous a deposit as the diamond fields must not exist within the official limit of the geological exploration of the 40th Parallel, unknown, and unstudied, I availed myself of the intimate knowledge possessed by the gentlemen of my corps, not only of Colorado and Wyoming, but the trail of every party traveling there, and was enabled to find the spot without difficulty. . . ."

#### The Fraud Is Revealed

King spent two days in examining the property, and on his own statement was convinced of its genuineness up to the end of the first day. On the second day, however, he discovered the first evidence of "salting," and bit by bit accumulated enough evidence to firm up and document this conclusion. First, the mineral asso-



The State Geological Survey of Kansas excels in (1) doing the job that a state survey is supposed to do, and (2) letting the Kansas public in on it. Let's look at item number 2.

Since mid-April, when this column got on the mailing list, the Survey has issued 37 press releases, or two per week. About half announce new maps and publications, or appointments and personnel changes. Others relate to conferences, geological studies of various kinds, or spot news such as a recent earthquake. The Survey also issues a monthly Newsletter through the University News Bureau.

In 1953, rock sets were made available to schools and scout troops, and since then some 1500 have been distributed. Daily requests call for the booklets "The Kansas Scene" and "Kansas Rocks and Minerals," as well as for the map showing the state's mineral resources. On request, students are sent a geologic time table, generalized geologic map, landscape map, and ground-water resources map. There is a special publications list for limited distribution to science teachers. Requests for all these items are increasing.

Some outfits might consider such a program enough, but not the Kansas Survey. On April 7 of this year it conducted a field conference for the science teachers of a two-county area just west of Kansas City. About 45 attended the one-day session. Four Survey staff members discussed the rocks, landscape, and mineral resources of the area. A free mimeographed guidebook was distributed. It is planned to hold at least one such conference per year, in different parts of the state.

On June 20, a 135-mile field trip in northeastern Kansas was sponsored for 59 high-school science students from 35 cities and towns. This was part of the first annual 10-day University Science and Mathematics Camp.

Meanwhile, back at the ranch ,the teachers' field-trip guidebook was revised and enlarged for the Kaw Council of the Boy Scouts, for use as a camp textbook.

Wow!

#### **NEW QUARTERS FOR AGI**



New AAAS Building

The American Geological Institute has moved into new offices in the recently completed ultra modern building of the American Association for the Advancement of Science at 1515 Massachusetts Ave., N. W., Washington, D. C. The AGI shares the third floor of the AAAS building with the American Society of Photogrammetry. American Geophysical Union and the editorial offices of the American Chemical Society. The Institute has shared extremely crowded quarters with the Earth Science Division, NAS-NRC in the National Academy of Sciences building at 2101 Constitution Ave. When it became apparent that adequate space could not be made available in the main Academy building, the NAS-NRC made arrangements for the AGI to move to the AAAS building.

The building is unusual in design, with glass exterior walls and vertical louvers which move by a calendar-coordinated clock mechanism to reflect the sun's rays. It has drawn wide comment since the louver design is a new architectural concept.

Although AGI is far from settled, the peace, quiet, and space of the new offices have already had a therapeutic effect. Our friends in the earth science division claim they love us but they are glad to have us out of their hair. The geological profession and the AGI should be deeply indebted to the Academy for providing these new offices as a part of their overhead service to AGI and at no additional cost to AGI. We believe that this is another significant step in the development of the Institute. Not only will the new environment permit us closer contact with the AAAS and our other neighbors, but we will continue our strong ties with the Academy and the Earth Science Division in particular.

Our mailing address will continue to be 2101 Constitution Ave., N. W.







#### SEGp meets in New Orleans

ROY F. BENNETT, Pres. (top)
J. P. WOODS, Vice-Pres.
JOHN C. HOLLISTER, Sec.-Treas.

The Society of Exploration Geophysicists, meeting in New Orleans for its 26th Annual Convention, has announced an outstanding program of more than 40 papers in the fields of exploration methods, equipment and re-

search. According to O. G. Holekamp, Program Chairman, the theme of the technical sessions includes: Offshore Exploration, Instrumentation and Research, Foreign Exploration, Model Studies, International Geophysical Year Economics and Case Histories. A field trip has been planned to cover some of the geophysical activities in the marshes of South Louisiana and the Gulf of Mexico.

The meeting will also mark the beginning of the terms of office of the Society's newly elected officers. They are:

ROY F. BENNETT, President. Chief geophysicist of Sohio Petroleum Co. attached to the general manager's staff in Oklahoma City, he served as Vice-President of SEGp (1954-1955).

J. P. WOODS, Vice-President. Has been Director of the Geophysical Laboratory of the Atlantic Refining Co., Dallas, Texas, since 1944 and is now chairman of the SEGp Committee of Publications.

JOHN C. HOLLISTER, Secretary-Treasurer. Head of the department of Geophysical Engineering at the Colorado School of Mines since September, 1949. Prior to that time, was Vice-President and General Manager of Heiland Research Corp. in Denver.

Quotation from acceptance speech of Penrose Medalist Arthur F. Buddington:

"Field geology, carried out in the light of all the geological, geophysical, and geochemical aids available, is an absolutely necessary complement to geochemical and geophysical studies." (G.S.A. Proc. for 1954, p. 62.)

Submitted by a Friend of Field Geology.

#### **EXAMINATIONS**

The New York State Education Department, Albany, N. Y., announces that a civil service examination will be held November 3 for the position of Senior Scientist (Geology), starting salary \$6,550; five annual increases bring this to \$7,980. The position involves directing a program of research in Pre-Cambrian and metalliferous economic geology.

Requirements: Bachelor's degree in geology and three years of work in the petrology of igneous or metamorphic rocks and/or metalliferous economic geology (two years of this must have been in significant field and laboratory research projects as evidenced by publication); also required, three additional years suitable training or experience of the above type.

Applications should be filed by October 5, although late applications may be accepted. Any qualified citizen of the United States may apply. For full information and applications write: Recruitment Unit, State Department of Civil Service, Albany, N. Y.

#### A.E.C.

"Graduate geologists with a minimum of three years experience needed for economic geologic studies in Colorado Plateau region and for editing of technical manuscripts. Annual salary range \$6390 to \$8990 dependent upon qualifications and experience. Submit Standard Government Application Form 57 or resume of education, experience and personnel history to Personnel Officer, U. S. Atomic Energy Commission, Grand Junction Operations Office, Grand Junction, Colorado."

#### U.S.G.S.

The U. S. Civil Service Commission announces an examination for filling Geophysicist (Exploration) positions located principally in the Geological Survey, Dept. of the Interior, in Washington, D. C., and throughout the United States. Entrance salaries range from \$3,670 to \$11,610 a year.

Applicants must have had appropriate education and experience. No written test is required.

Forms may be obtained from any Post Office except in regional headquarters cities, where they may be obtained from the U. S. Civil Service Regional Office. Applications will be accepted by the Board of U. S. Civil Service Examiners, Geological Survey, Dept. of the Interior, Washington 25, D. C., until further notice.

#### Hawaiian Institute

The National Science Foundation has contracted with American University, Washington, D. C., for advisory service in connection with a study of the proposed Hawaii Institute of Geophysics. The NSF was instructed by Congress to make a study of the Institute and to report back on or before May 1, 1957.

American University has appointed the following committee to make the study.

E. A. ECKHARDT, Chairman

CARL H. ECKART, Scripps Institute of Oceanography

LEO GOLDBERG, Dept. of Astronomy, Univ. of Michigan

CECIL H. GREEN, Chairman of Board Geophysical Services, Inc.

HARRY H. HESS, Chairman, Earth Science Division, NAS-NRC

M. KING HUBBERT, Shell Oil Co. SVERRE PETTERSSEN, Dept. of Meteorology, Univ. of Chicago

W. W. RUBEY, U. S. Geological Sur-

JOHN C. WARNER, President, Carnegie Institute of Technology

A bill (HR 7754) authorizing the establishing of the Hawaii Institute of Geophysics was introduced by Representative Farrington (Hawaii) in the last session of Congress (Geological Newsletter, October 1955), but was shelved pending further study.

#### AGT

#### Symposium on Geological Education

A series of short talks listed below will provide background for an open discussion on problems relating to geological education at the GSA meeting in Minneapolis. Moderator of the session will be Chalmer J. Roy. brief AGT business meeting will be presided over by J. Robert Berg, V. P. and C. E. Prouty, Secretary.

• The Nature of our Product

Dr. Chalmer Roy, Iowa State College · Basic Science Requirements in Geology Dr. Herbert Hendriks, Cornell College

 Applied Science and Engineering Courses in the Geology Curriculum

Dr. Keith M. Hussey, Iowa State College

· Relating the Geology Curriculum with the General Education Requirements of the

Dr. Donald Boardman, Wheaton College · Preparation for Graduate Study: Geo-Physics and Geo-Chemistry, compared to Geology and Mineralogy

Dr. B. F. Howell, Jr., Pennsylvania State University

• Industry Looks at the Geology Curriculum Guy Daniels, The California Co., New Orleans, La.

#### **AGI Slate Announced**

John R. Sandidge, Chairman of the Nominating Committee, has reported the following slate of officers for the American Geological Institute to Dr. M. M. Leighton, President.

#### For President

J. L. GILLSON, Geologist, Development Department, E. I. du Pont Co., Wilmington, Delaware. Dr. Gillson, an economic geologist, has been particularly active in affairs of the SEG and AIME and represents that society on the Board of Directors of the AGI. He is currently the Vice President of AGI.

#### For Vice President

J. V. HOWELL, Petroleum Geologist, Tulsa, Oklahoma. Chairman of the AGI Glossary Committee (front cover, August GEOTIMES) and member of the GSA editorial advisory committee, Dr. Howell has long been active in the field of petroleum geology and in the affairs of the AAPG.

#### For Secretary-Treasurer

DONALD H. Dow, Military Geology Branch, U. S. Geological Survey. Mr. Dow has proven very capable and helpful in matters pertaining to budgets and accounting. He is a candidate for reelection.

Officers for the Institute will be elected by the Board of Directors at the annual meeting of the Board in Minneapolis on November 2.

Assisting Mr. Sandidge on the Nominating Committee were Paul Lyons, SEGp, and Robert L. Bates, AGT.

#### AGI COMMITTEE MEETINGS

GSA Annual Meeting, Nicollet Hotel Minneapolis, Minn., Oct. 31, Nov. 1, 2

Tues., Oct. 30, 8:00 p.m., Aquatennial Room, Glossary Committee.

Wed., Oct. 31, 9:00 a.m., Holland Room, Executive Committee.

Thurs., Nov. 1, 9:00 a.m., Holland Room, Public Education and Public Relations Committee.

Thurs., Nov. 1, 2:00 p.m., Holland Room, Government Relations Committee.

Thurs., Nov. 1, 2:00 p.m., Centennial Room, Professional Relations Committee.

Fri., Nov. 2, 9:00 a.m., Holland Room, Board of Directors.

#### IMPRESSIONS from AROUND the WORLD

by Merle H. Guise

A recently completed 14 month jaunt around the world with my wife included the following ports of call—Australia, Indonesia, Malaya, Siam, India, Pakistan, and various countries of Europe, and Capetown-to-Cairo in Africa. Having prospected or mined in some of these areas in days past, the trip was a bit like coming back home. Opportunity was taken to chat with old friends, visit Mrs. Guise's relatives in Norway, and "shoot" game in five of the parks in Africa.

Mining matters, particularly the development of natural resources, were discussed in the capitals and out in the field. The trend noted in recent years has continueda slackening of exploration and development by the individual or small syndicate, and an increase in large projects by corporations and governments. More and more, the various bureaus of foreign countries and in many instances our Government, are called in when aid is being sought for a project, thus intensifying the political halo. This writer, a member of that fast disappearing band of stiff-backed rugged individualists who bridles when procedure takes the place of work, admits to bias, is intolerant of the planner-boys, and a scoffer of the charts and graphs of ultimate achievement of the projectionist. Around the world on local fronts some interesting trends and developments were observed.

Gold mining in Australia has been hit by inflation. It would be more difficult to assemble a crew of experienced workers for any mining project than in the USA due to the industrial and construction boom. The rush for uranium was still on but showing some slackening, as on the Colorado Plateau, and the public had been subjected to the same high pressure tactics. It appears that legitimate development will depend largely upon help from their government and ours.

Indonesia is still experiencing the void of all countries summarily severed from

overseer and financier. The irregulars still held the railway between Bandong and Djokjakarta, but the line was open elsewhere. Goodwill does not exist between the few remaining Dutch and local officials. The attitude and inexperience of the leaders, and the black market in the currency (4:1 prevailing), offer little inducement to outside capital, although tin and other mining opportunities are there.

In cruising or flying over Indonesia some "might-have-been" memories were aroused. In 1921 my partner urged me to join him in the search for oil in Borneo or Sumatra when I had earned a grubstake in tin mining. When I arrived, I could find no trace of him: either wine, "wild" women of Borneo, or the headhunters got to him first. Frustrated by the fact that oil in Borneo seemed pretty far from nowhere, I set off to Eddy Creek in New Guinea, on the rumor from an old prospector that there was plenty of coarse gold-if the cannibals did not eat you first. When my trading schooner broke down, and I could not get beyond Soerabaya, I decided to reverse to the far north, to try Urga and then to the barrens beyond the Lena River goldfields. Result: Eddy Creek turned into the famous Bulolo goldfields; the new Lena strike was rich but the Bolsheviks stopped me at Lake Baikal and finally put me out. Off with the dreaming and back to the trip.

Malaya tin mining was doing quite well, but the industry was static. The tendency is to mine out the known fields rather than intensify efforts to rehabilitate the older workings. Pressure from the "Terrorists" discourages new developments outside the known belt.

India and Pakistan are emerging from the political separation from the British and from religious division within. There is much to be done to pick up the slack resulting from such operation and to push ahead with the developments projected. The need of some outside capital and know-how is apparent.

Oil from Arabia is flowing. Most of these wells have a daily output ten times that of most of our U. S. and Canadian wells of similar depths, hence the oil itself is the least of the problems. The royalties paid, or percentage of the net, would be mighty appealing to many of the well owners in the U.S. But there is little to negotiate; "pay the limit or go elsewhere."

Europe presents the usual inconsistencies; freedom of visas and movement, but plenty of regulation and taxes, so that most mining developments would need a government tie-up.

Apartheid (I do better with that word by thinking of "apart" and "ate") is the problem for South Africa. The "tough" attitude might have better chance of success if the Dutch could forget and forgive the Boer war of '98 and be more friendly toward the British. Mines visited on the Rand were 10-20 per cent short of native labor. The Rhodesias seemed the least disturbed politically. East Africa is a great country, but every available cent is required to round up the Mau-Maus, rather than rounding out the development of Kenya, Tanganyika and Uganda. This again is a problem of colonialism, where military control is not as effective as for-

Sudan is just organizing after its newlywon independence, so they have the usual "gap" to bridge. Any mining developments of natural resources would need the political nod. Egypt, free for some years and with recent acquisition of the Suez Canal, has similar reconstruction problems to work out, and any mining would re-

quire the political blessings.

In order to cover the old Biblical Jerusalem we chose the Arab side of travel, thru Jordan, Lebanon and Syria, to Istanbul. New developments in those three Arab countries are pretty well stalled pending more stable relations with Israel.

The black market currency is one stumbling block to new developments in Turkey. The official rate of 2.8 to the U.S. dollar vs. the 8 to 10 to one on the offside creates an inflationary spiral that must leave private capital dizzy. The U.S. offices exchange convenience of 9.8 to 1 is not open to American taxpayers in general. Prices are based more or less on these "easy" money rates. Our room at the Istanbul Hilton and three basic meals (without the usual U.S.A. tea or coffee, or drinks) was about \$62 a dayaround \$20 at the customary exchange. Turkey has need of developing its metals, non-metallics, and coal; a stable currency would be the number one assist.

Periscoping the observations of a year's travel, one sees the world in a tremendous social and political readjustment that serves to complicate U.S. investments abroad, particularly in mining. One can only speculate as to the benefits of our aid and military spending abroad. The results leave me not a little disturbed.

George S. Hume, President of the Geological Society of America, has resigned from the Canadian Department of Mines and Technical Surveys and is now affiliated with the Westcoast Transmission Company Ltd., Calgary, Alberta.

#### Prominent Geoscientists Die

#### H. K. STEPHENSON

Kirk Stephenson, Program Director for Earth Sciences of the National Science Foundation, died suddenly on September 2. Dr. Stephenson was particularly distinguished for his war time services as a geophysicist in the Far East for which he was awarded the Medal of Freedom. He was a native of Youngstown. Ohio, and received his doctorate in geology at Princeton in 1941.

#### N. L. BOWEN

Dr. Bowen, prominent experimental petrologist, died in Washington on September 11. He had been in poor health for several years. Dr. Bowen was for many years identified with phase equilibra studies of rock-forming minerals at the Geophysical Laboratory, Carnegie Institution. From 1944 to 1947 he was head of the geology department at the University of Chicago. He retired in 1952. Dr. Bowen was a scientist of wide international reputation.

#### JOHN A. FLEMING

Geomagnetician and geophysicist, Dr. Fleming, former Director of the Depart-ment of Terrestial Magnetism of the Carnegie Institution of Washington, died in San Mateo, California, July 29, 1956. He was honorary President for life of the American Geophysical Union and was widely recognized internationally for his eminence in the field of geophysics. Among the many awards which he received were the William Bowie Medal of the AGU and the Charles Chree award of the Physical Society of London.

#### C. K. LEITH

Dr. Leith, Professor Emeritus, University of Wisconsin, prominent authority on the political and social aspects of mineral resources, died in Madison, Wisconsin, on September 13. Dr. Leith had a long and successful career in pre-Cambrian, metamorphic, structural and economic geology. He had been one of the most prominent geological consultants to the federal government on mineral resources for many years. He was 81 years old and remained most active until the time of his death. He had served as president of GSA and SEG, and was a member of many other scientific and technical societies.



DEAR SIR:

I herewith let you know that I have changed address because of employment with the Geological Survey of Turkey.

My congratulations for the new face of the "Geological Newsletter," it looks much nicer now, and even more representative! Please, go on in this way!

Finally, I hope to receive "GeoTimes" as regularly as I did in Holland.

With the best wishes.

Cordially yours,

J. C. W. MOLYN, Ankara, Turkey.

#### DEAR SIR:

I hope that Rayleigh will be spelled correctly in the AGI Glossary and not the way it appears on p. 4 of GEOTIMES for August, 1956.

Where, in Missouri, is Rella, p. 15? Yours very truly,

L. W. BLAU.

ED .: We made it-you find it.

#### DEAR SIR:

Licensing again!

Russia leads in the numbers of Engineers, because of their Trade School methods of training for a "spot," with no breadth of training.

Russia far outnumbers us, by some millions of geologists, when we consider the basic definition of a geologist as "one who studies the earth," and do not bother to license the professional.

If we license our geologists, we reduce the number who are qualified to be counted, and therefore hurt our comparison with Russia. No, *never* should we license a geologist!

Your bulletin is fine; I think you gave too much space to the already well known Hoover Report, and see no harm in the Velikovsky "ad," since a little open-mindedness is good for us.

I enclose a contribution, believing that if each of the 14,500 would do likewise, with their "widow's mite" your financial problems would dissolve. (Needless to say, if each of the wealthy, with their profits

from the large oil or mineral bodies developed as a direct result of geological field work, should contribute as they are able, there would be no financial problem, except disposition of surplus funds.)

Very sincerely,

FRANK N. Bosco, Denver Consultant.

#### Diamond continued from page 12

ciation and distribution was improbable. In nine out of ten instances the gems were on the hard surface of the ground, and some were even in exposed positions where they would be dislodged by the storms of a single winter. No gems were found below the first inch of surficial material. No gems were found in the country rock. Where thick concentrations of gems were found at the head of a draw, none could be found downstream. A few gems had been stuck in cracks; others had been sprinkled on and thrust into holes poked into ant hills. Finally, areas surrounding the salted tract were completely barren.

Having satisfied himself as to the worthlessness of the tract, King immediately telegraphed his conclusions to the president of the San Francisco and New York Mining and Commercial Company. Harpending reports that the receipt of this telegram caused wild excitement in the company offices, which is probably not an overstatement. A party consisting of the company president, two directors, and Henry Janin was hurriedly organized to return to the property with King to test the truth of King's assertions. This was soon accomplished and the stunned officials and Janin returned at once to San Francisco to communicate their findings to the company directors and to the public.

#### Aftermath

The excitement that followed public disclosure of the fraud was intense. The story ran for several days in most newspapers, and many gave full page, detailed accounts of the smallest relevant details.

Without purpose or will for continued existence the diamond company was dissolved as quickly as possible. The twenty-five original stockholders, who had subscribed \$2,000,000 for a half interest in the company, were reimbursed in full with

Mr. Ralston making up a \$300,000 deficit in the company treasury. Mr. Harpending and the several other associates who had been instrumental in forming the company, assumed the remainder of the loss. No member of the general public was hurt financially, though given another year to run, the diamond frenzy would have done incalculable harm.

The chief sufferers of the fiasco were the would-be diamond millionaires, who slunk from home to office to club trying to avoid the merry quips and jibes of an amused public. Several with thinner skins went into temporary retirement to relieve their embarassment. Of all the principals, Mr. Ralston alone added a light touch by having the signed receipts of the reimbursed stockholders neatly framed and hung as a mural decoration in his office.

Mr. Arnold, who departed San Francisco prior to King's expose with the major part of \$660,000, retired to his old home in Elizabethtown, Kentucky. One of the minority members of the group that formed the diamond mining company followed him there and filed suit for the return of \$350,000, representing personal losses and damages. To this suit Arnold replied caustically in print that he had turned over a genuine property, and appended the statements of Tiffany and Janin. He then relaxed in the company of his Kentucky relatives and friends. As the Civil War was not long over, and Arnold was a local hero returning home after a successful foray into Yankee California, it soon became apparent that he could not be sued successfully in his home town. However, he could be harried indefinitely in the courts. Finally, a compromise was reached out of court in which Arnold surrendered \$150,000 in exchange for a promise of no further prosecution. This was a considerable victory, which he did not long enjoy for he was killed about a year later in a private quarrel over a local business

In the aftermath of the fraud, the real, uncontested winner was Clarence King, who was widely acclaimed in the press and even from the pulpit for his integrity and wisdom. Geology and the geologic method shared the spotlight with King at a time when public support was needed for geology and for the establishment of a national Geological Survey. Thus, in an oblique way, geology owes a slight debt to the Great Diamond Fraud and its perpetrators.



PALEOTECTONIC MAPS OF THE JU-RASSIC SYSTEM, by Edwin D. Mc-Kee, Stephen S. Oriel, Vernon E. Swanson, Marjorie E. MacLachlan, James C. MacLachlan, Keith B. Ketner, June Waterman Goldsmith, Ruth Young Bell, and Dolores J. Jameson, with a separate section on Paleogeography by Ralph W. Imlay. Miscellaneous Geologic Investigations, Map I-175, U. S. Geological Survey, Washington 25, D. C., \$5.00 (20%) discount in orders of 2 or more copies.)

This folio, measuring 24 x 30 inches, is the first of a series which, when completed, will summarize available knowledge of each geologic system represented in the United States. The information presented in the present folio is the summation of the results of thousands of geologists whose work has appeared in hundreds of

publications.

Following a text of 3 folio pages (each with 10 columns 24 inches long), two pages of references cited, a table giving the correlation of the stratigraphic units in the major Jurassic divisions, are 9 maps of the U.S. in color, to a scale of 1/5,000,000, depicting successively, source of data, a geologic map showing the geologic units directly beneath the Jurassic System, an isopach map giving a summary of Jurassic rock thicknesses, four maps giving lithofacies and thicknesses for four time intervals in the Jurassic System, one sheet giving 10 paleogeographic maps and a final and striking one giving "Environments of deposition of Jurassic sediments for selected times and places." This outstanding and really unique publication is a must for all professional geologists and teachers of the science.

SCIENTIFIC RESEARCH EXPENDI-TURES BY THE LARGER PRIVATE FOUNDATIONS, by F. Emerson Andrews, Russell Sage Foundation, for the National Science Foundation, 1956, Gov't Printing Office, Washington 25, D. C., \$0.25.

A GUIDE FOR BEGINNING FOSSIL **HUNTERS** by Charles W. Collinson, 34 pp., Illinois State Geological Survey, Educational Series 4, 25 cents.

A very well illustrated handbook for the amateur.

#### OUTSTANDING McGRAW-HILL BOOKS

#### PHYSICS AND CHEMISTRY OF THE EARTH

Progress in Physics and Chemistry of the Earth Volume I

> Edited by L. H. Ahrens, Oxford University; Kalervo Rankama, University of Helsinki; and S. H. Runcorn, King's College. 326 pages, \$8.00

Provides authoritative and up-to-date surveys of progress, results, and methods for those actively engaged in geophysics and geochemistry. Volume I consists of chapters on important specific topics written by internationally known scientists. It contains a review of progress on the geochemistry of the halogen group of elements and a review of some aspects of Russian geochemistry and geophysics during the last five years.

#### ELASTIC WAYES IN LAYERED MEDIA With Geological, Acoustical and Engineering Applications

By W. Maurice Ewing, Columbia University, Frank Press, California Institute of Technology; and W. S. Jardetzky, Columbia University. McGraw-Hill Series in Geological Sciences. In press

An outstanding new work of vital importance in geophysical prospecting, seismology, many acoustical problems, oceanography, etc. It presents a uniform presentation of the investigations (by the Lamont Geological Laboratory group) on earthquake seismology, underwater sound, model seismology and related problems. It covers fully the experimental and the theoretical aspects of the subject, spanning the whole world literature, in order to give new investigators the first review of the field:

#### PRINCIPLES OF PETROLEUM GEOLOGY

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STRUCTURAL GEOLOGY by L. U. de Sitter, University of Leiden (Holland), 552 pp., McGraw-Hill Book Co., Inc., New York, 1956, \$8.00.

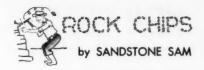
The American geologist is presented the most up-to-date compilation of field data on European localities of structural interest. Most of the illustrations are fine uncluttered line drawings which portray nicely the features being discussed. Intimate knowledge of European geography is not necessary to follow the structural argument, but a good atlas is a handy adjunct for maintaining geographic and political orientation. There are abundant references to non-European structural patterns but the discussions are not as detailed as for European localities. The American reader may be brought up short occasionally by such trivial editorial errors as using Earth Valley and Thumboldt Range for Death Valley and Humboldt Range.

The preface states that " . . . we really have advanced beyond the argument about the sealing-wax which you can break with your hands but which will still flow when left alone . . . ," and Part One measures Theoretical Structural Geology with neat formulae. The principles established by the laboratory experiments on rock strain are held to be valid but the numerical values are not applicable to tectonic processes. The descriptions of structures and regions in Part Two carry interpretations that reflect on intuitive application of principles based on long intimate concern with the genesis and characteristics of structural features.

The terminology used is simple and direct, indicating perhaps that the author views structural processes as few in number, interrelated, and in many instances gradational; he is not preoccupied by fine distinctions in geometry.

Part Three, Geotectonics, is a timely compilation of numerous interpretations and hypotheses. The author shows favor for those concepts which are in harmony with the view that the earth's crust is under varying but unceasing stress, that at no time has the entire crust been completely stable but only rarely have there been world-wide convulsions.

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A mountaineer was chinning with a geologist who happened along in the course of field work. "Yep," drawls the old mountaineer, "that ledge you're standin' on is two hundert 50 million and ten years old."

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PHASE DIAGRAMS FOR CERAMISTS, Ernest M. Levin, Howard F. McMurdie, and F. P. Hall. 286 pages. American Ceramic Society, 4055 North High St., Columbus 14, Ohio. 1956. \$10.

Includes general discussion of phase diagrams, the phase rule, interpretation of diagrams, and experimental methods for high-temperature, heterogeneous equilibrium.

THE DINE: Origin Myths of the Navaho Indians by Aileen O'Bryan, Bull. 168, Bureau of Ethnology, Smithsonian Inst. 187 pp., Supt. of Documents, Wash. 25, D. C., \$1.75.

This book relates legends of the Navahoes as told to the author by Chief Sandoval, before his death. To the geologist who has worked in Indian country it will provide fascinating relaxation.

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Bottom Sediments in Southern North Sea. A detailed map of bottom sediments of the Southern North Sea has recently been completed. It is based on 4,000 bottom sediment samples and will include analyses of heavy minerals and forams present. Will be published under the authorship of Dr. J. Jarke by the German Hydrographic Institute in late 1956.

Torsion Magnetometer for measuring the vertical component of the earth's magnetic field has recently been developed in Germany. The instrument is designed for field use and has a magnetic system provided with a torsion axis in which torsion acts as the standard of measurement. The equipment is lightweight and rugged. For information write to Askania-Werke AG, Berlin-Friedenan, Bundeselle 86-89 (Allied Sector) Berlin.

Card Catalogue. The McLean Paleontological Laboratory announces the coming publication of the Frizzell-Exline Card Catalogue of Holothurian Sclerites, edited by Don L. Frizzell and Harriet Ex-The initial part of this catalogue will be based upon their Monograph of Holothurian Sclerites, and subsequent units will be issued as determined by the editors. This catalogue is being published in the hope that it will aid serious workers in Paleontology to use these interesting fossils, which have considerable ecological value. Prices and publication details will closely follow the pattern established by the McLean Card Catalogue of American Foraminifera. For information, and to be placed on the notification list, write to: James D. McLean, Jr., P.O. Box 916, Alexandria, Va.

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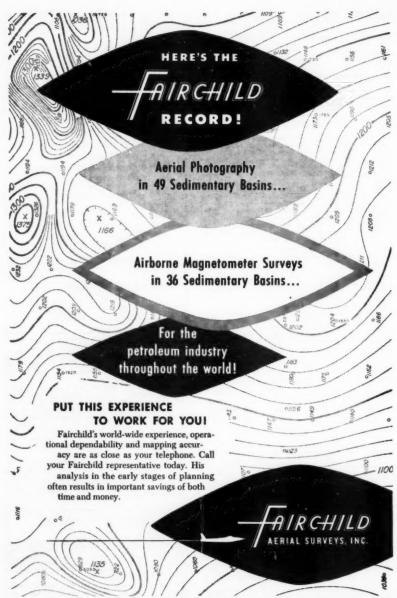
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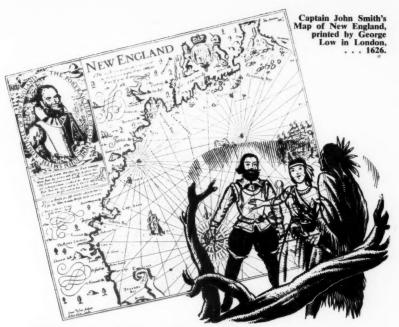
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